

INTERNATIONAL SEARCH REPORT

Internat. Application No.
PCT/IB2004/004176

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G11B7/125 G11B7/13 H01S5/183 G11B7/09

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G11B H01S

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| Y | US 6 574 257 B1 (THRONTON ROBERT L ET AL) 3 June 2003 (2003-06-03) | 1,6,7 |
| A | column 4, line 66 - column 15, line 4; figures 1-4 | 2 |
| Y | US 6 614 825 B1 (HANG ZHIJIANG ET AL) 2 September 2003 (2003-09-02) | 1,6,7 |
| A | column 4, line 7 - column 7, line 18; figures 1-5 | 2 |
| A | US 6 314 122 B1 (PEALE DAVID REESE) 6 November 2001 (2001-11-06) column 1, line 36 - column 1, line 39 column 4, line 43 - column 6, line 43; figures 7-10 | 1,2,6,7 |
| | ----- -/-- | |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

18 February 2005

Date of mailing of the international search report

02.05.2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Moje, A

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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|---|-----------------------|
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| A | <p>GEORGE PAN Z ET AL: "OPTICAL INJECTION INDUCED POLARIZATION BISTABILITY IN VERTICAL-CAVITY SURFACE-EMITTING LASERS" APPLIED PHYSICS LETTERS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 63, no. 22, 29 November 1993 (1993-11-29), pages 2999-3001, XP000414956 ISSN: 0003-6951 the whole document</p> <p>-----</p> | 1,2,6,7 |

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1, 2, 6, 7

Optical pickup and error signal generation method
characterized by push pull error signal detection.

2. claims: 3,4

Optical pickup characterized by focus error signal detection

3. claims: 5, 8-13

Optical pickup and error signal generation method
characterized by an array of vertical-cavity
surface-emitting laser diodes and a corresponding array of
detectors for generating error signals.

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1,2,6,7

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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|-------------------|----------------|
| Internationa | Application No |
| PCT/182004/004176 | |

| Patent document cited in search report | | Publication date | | Patent family member(s) | Publication date |
|---|----|---------------------|------|----------------------------|---------------------|
| US 6574257 | B1 | 03-06-2003 | WO | 0157975 A2 | 09-08-2001 |
| US 6614825 | B1 | 02-09-2003 | AU | 7997000 A | 10-05-2001 |
| | | | WO | 0126102 A1 | 12-04-2001 |
| US 6314122 | B1 | 06-11-2001 | NONE | | |